

Remarks/Arguments

Claims 1-8 and 10-22 remain pending in the present application. Claims 1, 15, 17 and 21 have been amended. No claims have been added and no claims have been canceled. Applicants have carefully considered the cited art and the Examiner's comments, and believe the claims patentably distinguish over the cited art in their present form. Reconsideration of the rejection is, accordingly, respectfully requested in view of the above amendments and the following comments.

I. 35 U.S.C. § 132(a) and 35 U.S.C. § 112, First Paragraph

The Examiner has objected to the Amendment filed July 25, 2005, under 35 U.S.C. § 132(a) as introducing new matter into the disclosure; and has correspondingly rejected claims 1-8 and 10-22 under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification. Specifically, the Examiner contends that the phrase "an object at an unknown object distance within an object distance range" recited in claims 1, 15, 17 and 21 is not supported in the specification.

Applicants believe the subject matter objected to by the Examiner is adequately supported in the application as originally filed. However, in order to expedite prosecution, claims 1, 15, 17 and 21 have been amended to utilize language that more precisely tracks terminology used in the specification. In particular, claim 1 has been amended to recite "an imaging optics for forming an image of an object at an object distance that may vary within an object distance range", and claims 15, 17 and 21 have been amended in a similar manner. Support for this terminology can be found, for example, on page 6, lines 7-9, and on page 8, lines 15-17 of the present specification.

In view of the amendments to claims 1, 15, 17 and 21, any issues with respect to new matter have been overcome, and withdrawal of the objection under 35 U.S.C. § 132(a) and the rejection under 35 U.S.C. § 112, first paragraph, is respectfully requested.

II. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 1-8 and 10-22 under 35 U.S.C. § 103(a) as being unpatentable over Hinnrichs (U.S. Patent No. 5,867,264) in view of Shipp et al. (U.S. Patent No. 5,264,925). This rejection is respectfully traversed.

A fundamental notion of patent law is the concept that invention lies in the new combination of old elements. Therefore, a rule that every invention could be rejected as obvious by merely locating each element of the invention in the prior art and combining the

references to formulate an obviousness rejection is inconsistent with the very nature of "invention." Consequently, a rule exists that a combination of references made to establish a *prima facie* case of obviousness must be supported by some teaching, suggestion, or incentive contained in the prior art which would have led one of ordinary skill in the art to make the claimed invention.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The requirements for establishing a *prima facie* case of obviousness in view of a combination of references are set forth in detail in Section 2142 of the MPEP and include the requirements that the Examiner explain in detail why the combination of the teachings is proper, that the Examiner provide a clear and convincing line of reasoning as to why an artisan would have found the claimed invention obvious in light of the teachings of the references, and that the Examiner provide a showing that it is the prior art and not the Applicant's own disclosure that teaches the combination asserted by the Examiner.

Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness in rejecting the claims as being unpatentable over Hinnrichs in view of Shipp et al.; and, in fact, that it would not be obvious to one skilled in the art to combine the references as proposed by the Examiner to achieve the present invention.

Claim 1 of the present application is as follows:

1. An imaging system, comprising:

an imaging optics for forming an image of an object at an object distance that may vary within an object distance range, said imaging optics having a focal length that varies with wavelength of light that illuminates the object;

an image receiving unit for receiving an image of said object formed by said imaging optics;

a light source for sequentially illuminating said object with light of different ones of a plurality of wavelengths for providing a plurality of images of said object received by said image receiving unit; and

a processor for selecting a desired image among said plurality of received images.

Hinnrichs is directed to an imaging spectrometer for measuring the spectral composition of objects from a remote location. In Hinnrichs, image multispectral sensing (IMSS) records the light spectrum of luminous objects in order to identify the objects (target recognition). As described in col. 1, lines 32-63 of Hinnrichs, polychromatic light emanating

from an object is collected by a dispersive optical element which disperses the light and focuses the dispersed light onto a photodetector. The dispersive optical element focuses light of different wavelengths at different focal lengths; and, accordingly, Hinnrichs discloses that by incrementally changing the spacing between the diffractive lens and the photodetector, focused images of the object at different wavelengths can be recorded. As described in col. 2, lines 33-36 of Hinnrichs, "The frames can be viewed as digital color separation of the image and that superimposing the frames will reconstruct the fully chromatic image".

In rejecting the claims, the Examiner states:

Hinnrichs teaches that the image light from the object or the target includes image light of *different colors or wavelengths*, (i.e. several wavelengths such as red and blue, please see column 2 line 20), this implies that light including different colors or wavelengths is used to illuminate the object.

Final Office Action dated October 3, 2005, page 4.

The Examiner acknowledges that Hinnrichs does not explicitly disclose a light source that is used to sequentially illuminate an object with light of different ones of a plurality of wavelengths, but cites Shipp et al. as disclosing this feature. In particular, the Examiner states:

Shipp et al in the same field of endeavor teaches a color imaging system that uses a *plurality* of light emitting diodes (LEDs, 11-13, figure 1, three diodes are used in this demonstration) for sequentially illuminating an object to obtain different color images of the object (please see column 2, line 59 to column 3, line 9). It would have been obvious to apply the teachings of **Shipp** et al to modify the imaging apparatus of **Hinnrichs** to use a light source that is capable of illuminating the object sequentially with different color or wavelength of the light so that different color or wavelength component of the image of the object can be processed at a time.

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Applicants respectfully disagree. Initially, Applicants respectfully submit that Hinnrichs and Shipp et al. (hereinafter "Shipp") are not in the same field of endeavor as indicated by the Examiner; and, further, that neither Hinnrichs nor Shipp is in the same field of endeavor as the present invention. Hinnrichs relates to a spectrometer system for measuring the spectral composition of an object to permit identification of the object. Shipp, on the other hand, relates to a system for forming high resolution color video signals suitable

for use in viewing an object on a television screen. Shipp sequentially illuminates an object with light of different colors in order “to eliminate flicker in a simplified sequential color video system” (see col. 2, lines 5-7 of Shipp). One skilled in the art seeking to achieve the present invention would not be led to the spectrometer system of Hinnrichs, and would not be led to combine the spectrometer system of Hinnrichs with the teachings of Shipp in order to achieve the present invention.

Furthermore, Applicants respectfully submit that it would not be obvious, in any event, “to modify the imaging apparatus of Hinnrichs to use a light source that is capable of illuminating the object sequentially with different color or wavelength of the light” as asserted by the Examiner. The system illustrated in Fig. 1 of Hinnrichs and referred to by the Examiner does not appear to include a light source of any kind and would appear to have no reason to include a light source of any kind. The purpose of the system of Hinnrichs is to measure the spectral composition of an object to permit the object to be identified. To accomplish this, the system in Hinnrichs collects light that emanates from the object irrespective of the original source of the light. The system disclosed in Hinnrichs does not require a light source, and there is no teaching or suggestion in either Hinnrichs or Shipp to include a light source in the spectrometer system of Hinnrichs.

Yet further, even if there was some type of motivation to provide a light source in the system of Hinnrichs, providing a light source that sequentially illuminates an object with light of different ones of a plurality of wavelengths would appear to defeat the purpose of Hinnrichs which is to measure the entire spectral composition of an object to permit the object to be identified. Thus, there would certainly appear to be no motivation to include the particular light source disclosed in Shipp in the system of Hinnrichs.

For at least all the above reasons, the Examiner has not fulfilled the requirements for establishing a *prima facie* case of obviousness of claim 1 over Hinnrichs in view of Shipp. Applicants respectfully submit that it is Applicants’ own disclosure and not the cited art of record that teaches the combination proposed by the Examiner.

Applicants also respectfully submit that neither Hinnrichs nor Shipp nor their combination teaches or suggests “a processor for selecting a desired image among said plurality of received images” as also recited in claim 1. The Examiner states on page 3 of the Office Action that “Hinnrichs then teaches that a *processor* is used to *enhance* the in-focus image which in a way “selects” the desired in-focus image among the plurality of images received (please see Figures 1-2, column 1-3). Applicants respectfully disagree. Enhancing an image is not the same as selecting a desired image among a plurality of received images, and

is certainly not a teaching of a processor for selecting a desired image among a plurality of received images that are formed by sequentially illuminating an object with light of different ones of a plurality of wavelengths, as recited in claim 1.

For at least all of the above reasons, claim 1 is not obvious over Hinnrichs in view of Shipp, and should be allowable in its present form

Claims 2-8 and 10-14 depend from and further restrict claim 1, and should also be allowable in their present form, at least by virtue of their dependency,

Independent claim 15 recites limitations similar to claim 1 and should be allowable in its present form for similar reasons as discussed above with respect to claim 1. Claims 16-22 depend from and further restrict claim 15 and should also be allowable, at least by virtue of their dependency.

Therefore, the rejection of claims 1-8 and 10-22 under 35 U.S.C. § 103(a) has been overcome.

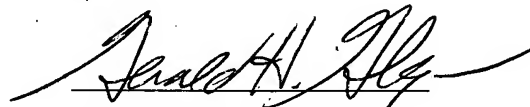
III. Conclusion

For all the above reasons, it is respectfully urged that claims 1-8 and 10-22 are allowable in their present form, and that this application is now in condition for allowance. It is, accordingly, respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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